

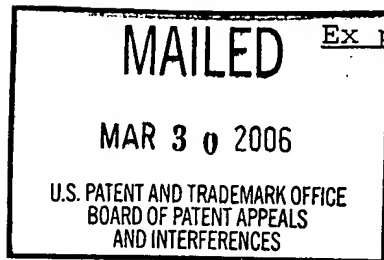
The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte MICHAEL J. BERMAN and JAN FURE

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Appeal No. 2006-0629  
Application No. 10/668,021

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ON BRIEF

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Before GROSS, LEVY, and NAPPI, Administrative Patent Judges.  
LEVY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-9, 19 and 20, which are all of the claims pending in this application.

We REVERSE.

BACKGROUND

The appellants' invention relates to improving the uniformity and other process characteristics of chemical mechanical polishing of integrated circuits (specification,

page 2). A sheet of pressure sensitive material is placed between the conditioner and the polishing pad, and the polishing pad is lowered onto the sheet of pressure sensitive material. A desired degree of pressure is applied between the conditioner and the polishing pad, thereby creating an impression in the sheet of pressure sensitive material. The sheet of pressure sensitive material is inspected to determine the uniformity of the pressure applied between the conditioner and the polishing pad (specification, page 5).

Claim 1 is representative of the invention, and is reproduced as follows:

1. A method for inspecting a uniformity of pressure applied between a conditioner and a polishing pad on a chemical mechanical polisher, the method comprising the steps of:

placing a sheet of measure sensitive material between the conditioner and the polishing pad,

lowering the conditioner onto the sheet of pressure sensitive material,

applying a desired degree of pressure between the conditioner and the polishing pad, thereby creating an impression in the sheet of pressure sensitive material,

lifting the conditioner from the sheet of pressure sensitive material, and inspecting the sheet of pressure sensitive material to determine the uniformity of the pressure applied between the conditioner and the polishing pad.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Lin	6,477,447	Nov. 5, 2002
Berman	6,722,948	Apr. 20, 2004
		(filed Apr. 25, 2003)

Claims 1-9, 19 and 20 stand rejected under 35 U.S.C. § 102 (a) or (e) as being anticipated by Lin<sup>1</sup>.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejection, we make reference to the answer (mailed August 29, 2005) for the examiner's complete reasoning in support of the rejection, and to the brief (filed June 17, 2005) and reply brief (filed October 31, 2005) for the appellants' arguments thereagainst.

Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the brief have not been considered. See 37 CFR § 41.37(c)(1)(vii) (eff. Sept. 13, 2004).

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<sup>1</sup>Although not listed in the statement of the rejection, the examiner additionally relies upon Berman to support the examiner's finding of inherency in Lin.

OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the rejections advanced by the examiner, and the evidence of anticipation relied upon by the examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

Upon consideration of the record before us, we make the determinations which follow. Turning to the rejection of claims 1-9, 19 and 20 under 35 U.S.C. § 102(a) or (e) as being anticipated by Lin, we begin with claim 1. We note as background that to anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently. In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997). As stated in In re Oelrich, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981) (quoting Hansgird v. Kemmer, 102 F.2d 212, 214, 40 USPQ 665, 667 (CCPA 1939)) (internal citations omitted):

Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set

of circumstances is not sufficient. If, however, the disclosure is sufficient to show that the natural result flowing from the operation as taught would result in the performance of the questioned function, it seems to be well settled that the disclosure should be regarded as sufficient.

Appellants argue (brief, page 4) to the effect that Lin is directed to a wafer polishing subsystem, not a conditioner subsystem of a chemical mechanical polisher. It is argued (id.) that Lin depicts only wafer polishing components and does not depict any conditioner components. Appellants point to various portions of Lin to support their position that Lin provides pressure sensing of the wafer surface, and assert that Lin describes pressure sensing in regard to a wafer, and not a conditioner. Appellants dispute (id.) the examiner's assertion that a conditioner falls under the definition of "pressure related components" because Lin defines pressure related components as detecting pressure distribution on a wafer surface. Appellants add (brief, page 5) that there is no way that Lin could detect pressure distribution on a wafer surface by measuring the pressure on a conditioner, as claimed.

Turning to the Berman reference, relied upon by the examiner to support the examiner's finding of inherency in Lin, appellants argue (id.) that it is very evident from figure 1 of Berman that

the wafer polishing subsystem and the conditioner subsystem of a chemical mechanical polisher are separate sub-systems.

The examiner's position (answer, page 3) is that Lin's disclosure (col. 3, lines 37-42) supports the examiner's position that Lin does not limit his inventive method to only the described embodiment, but to any "pressure related component" that would be part of a chemical mechanical polishing (CMP) device. The examiner asserts (answer, pages 3 and 4) that a conditioner is inherently a CMP device that is used to treat the polishing pad, and that the conditioner must be a "pressure related component."

As evidence of inherency, the examiner turns to Berman for a disclosure that the CMP process is controlled by a process called conditioning, and that during conditioning, the conditioner is brought into contact with the surface of the pad. The examiner points to Lin (col. 3, lines 20-33) for a disclosure that "it is desirable to engage the conditioner 12 **against the surface of the pad 16 with a known and repeatable force**, and also with a force that is known and preferably uniform across the conditioner 12."

From our review of Lin, we agree with appellants that the invention is directed to detecting pressure distribution on a wafer surface by employing pressure sensitive films located on

various pressure components such as a wafer carrier, polishing pad, and mechanical arm members of a CMP machine (col. 1, lines 12-16). As shown in figure 3B, pressure sensitive film PSF2 is located between wafer 30 and polishing pad 34. Lin further discloses (col. 3, lines 37-42), as noted by the examiner, that "[i]n addition, the pressure components applied in the embodiment of the present invention refer to, but not limited to, mechanical CMP pressure related components including a wafer carrier, a polishing pad, and mechanical <sup>2</sup>arm members of a CMP machine." However, we find from this passage, and our review of the entire Lin reference, that the broad reference to the pressure components were not limited to the disclosed elements is not a specific disclosure of a conditioner.

Turning to Berman, we agree with the examiner (answer, pages 4 and 5) that Berman discloses having the conditioner engage the surface of the pad with a known and repeatable force. However, the fact that conditioning is a known CMP process does not necessarily mean that conditioning is inherent in Lin. Inherency cannot be established by possibilities or probabilities but must necessarily flow from the disclosure of the reference. In this instance, we find that conditioning is not inherent in Lin. In any event, even if we found that conditioning was inherent in Lin

as a pressure related component, as advanced by the examiner, the language of claim 1 would still not be met. Claim 1 requires that the pressure sensitive material is located between the conditioner and the polishing pad. In Lin, the pressure sensitive sheet is located between the wafer and the polishing pad. Thus, even if Lin inherently disclosed a conditioner, we would have to resort to speculation to find that the pressure sensitive material would be moved from a location between the wafer and the polishing pad to a position between the polishing pad and the conditioner. The examiner may not resort to speculation or unfounded assumptions to supply deficiencies in establishing a factual basis. See In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967).

From all of the above, we find that the examiner has failed to establish a prima facie case of anticipation of the invention set forth in claim 1. Accordingly, the rejection of claim 1 under 35 U.S.C. § 102 (a) or (e) as being anticipated by Lin is reversed, along with claims 2-9 which depend therefrom. As independent claim 19 also requires that the pressure sensitive material is placed between the conditioner and the polishing pad, the rejection of claim 19, and claim 20 which depends therefrom, under 35 U.S.C. § 102(a) or (e) is reversed.



To summarize, the decision of the examiner to reject claims 1-9, 19 and 20 under 35 U.S.C. § 102 (a) or (e) is reversed.

Anita Pellman Gross

STUART S. LEVY

  
ROBERT E. NAPPI

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LSI LOGIC CORPORATION  
1621 BARBER LANE MS: D-106  
MILPITAS, CA 95035

SSL/jrg